## \*\*ATTENTION\*\*

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## Snags Are Valuable Wildlife Habitat

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Roooooaaaaarrrrrrr!

A cool, still September morning somewhere in a Washington forest is shattered by a woodcutter's chainsaw and within minutes a large, old Douglas fir snag crashes to the forest floor. By noon this newly created log is reduced to a neatly stacked pick-up truck load of prime firewood. With satisfaction that only comes from splitting wood, the woodcutter wipes beads of sweat from his forehead, already sensing the security and warmth that his living room fireplace will provide during the upcoming cold winter months.

Little does he realize that he may be in conflict with other forest needs. Little is he aware that he has removed an important resource from the forest—essential wildlife habitat—a snag!

Snags or dead standing trees provide essential habitat for many species of wildlife. In Washington, over 100 species of birds and mammals use snags and over 30 species are dependent on them for a variety of physical and behavorial needs including nesting, roosting, feeding and hibernating.

One major need is for nesting sites for cavity-nesting birds. Woodpeckers, classified as primary cavity nesters, have the ability to excavate nesting holes in snags with their powerful beaks. Woodpeckers usually excavate new holes each year and some may peck several holes a season for nesting and roosting. Old and unused woodpecker holes are then available for other cavity-nesting birds that are unable to excavate their own holes.

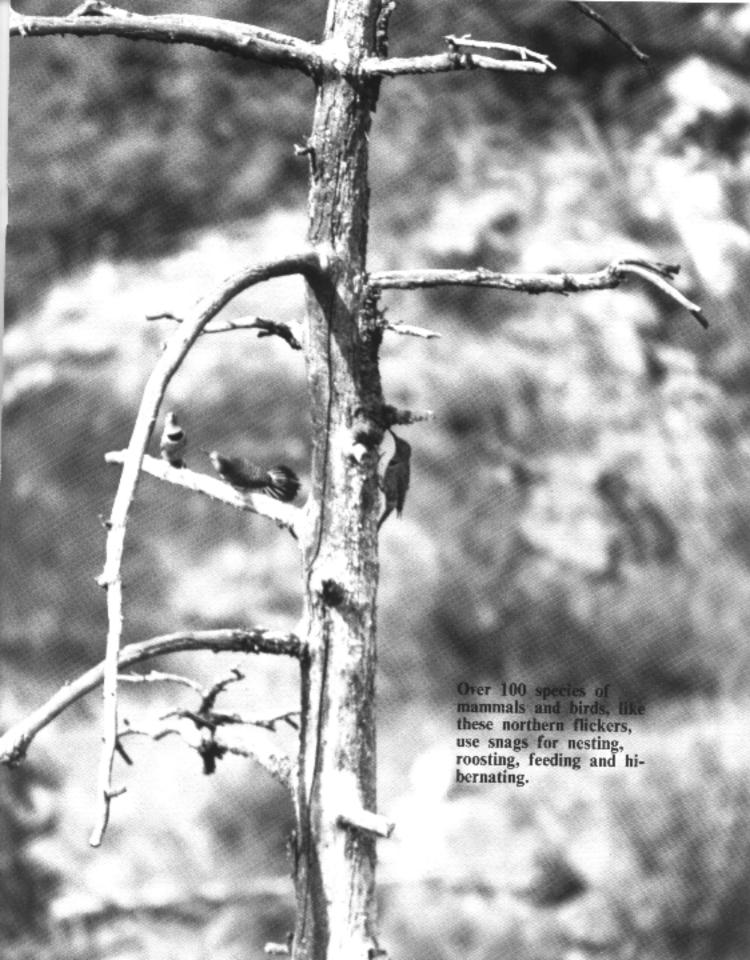
These birds, classified as secondary cavity nesters, include swallows, wrens, bluebirds, kestrels and some species of owls. Secondary cavity nesters also take advantage of naturally occurring cavities and some, such as brown creepers, nest in crevices formed by loosening bark. Like woodpeckers, chickadees and nuthatches are capable of excavating their own nesting cavities in heavily decayed or soft snags. Secondary cavity nesters also include mammals such as flying squirrels, martens and raccoons.

Snags also provide many other important habitat functions. Raptors, such as ospreys and great gray owls, utilize broken-top snags for nesting sites. Other raptors and fly-catching birds utilize snags for hunting sites. Snags are favorite resting, loafing, and roosting sites for many birds such as band-tailed pigeons. Several species of bats roost under loosened bark of snags, and squirrels depend on snag cavities for winter dens and for storage of winter foods.

Numerous studies have documented many other combinations of uses by many other species. Snags also harbor several forms of insects and other invertebrates, therefore providing very important feeding sites for woodpeckers and other insect-feeding birds and animals.

When considering all of these

habitat functions, it becomes quite evident snags are critical to the overall a health of forest ecosystems; something that is not well understood or appreci- E ated. Snags may also have economic gbenefits in forest management. Cav-



ity-nesting birds are mostly insect feeders and may play a critical role in preventing outbreaks of forest insect pests. Testimony for this economic value is evident in the tremendous effort and expense European forest managers have invested in artificial nesting boxes for snag deficient forests in an attempt to re-establish natural control of forest pests.

Regardless of their proven importance, snags are disappearing from Washington forests at alarming rates. Snag habitat is very difficult to maintain in forests managed for timber, and of course, snags are being harvested at a rapidly growing pace by firewood cutters. This loss of snag habitat is causing much concern among wildlife biologists. The abundance of snag dependent wildlife is directly related to the number and distribution of snags in our forests.

Managing snags for wildlife is

very complex. Snag requirements in size and numbers vary greatly by species and by habitat type. Pileated woodpeckers prefer large snags (20inch diameter and larger) found in mature or old growth forests, while western bluebirds will use smaller snags, as they prefer open forested areas. Generally large snags have the most importance because they are used by a greater variety of wildlife and remain standing over a much longer period. In most types of forests it takes over 100 years to establish large snags. Their condition is also important.

When trees die and become snags, they go through a series of stages, with each stage having value as habitat. Over the first few years, the snags remain solid and retain many limbs. At this time they're valuable for hunting and resting birds. When the bark begins to loosen, crevices are available

Pileated woodpeckers — black, crow-sized birds with red crests — use their chisel-like bills to bore large holes in search of insects.

for roosting bats and for some nesting birds. Eventually, decay weakens snags and they begin to shed limbs, tops, and bark.

Broken-topped snags with hard outer surfaces and softer interiors formed from heart-rot have the greatest appeal to woodpeckers. Snags in this stage are most valuable to cavitynesting birds. Finally, decay reduces and softens snags to stubs which remain important as feeding sites and for soft wood excavators, the chickadees and nuthatches. Many snags fall before the final stages of decay, but even as decaying logs they provide important feeding sites for birds and hiding cover for terrestrial wildlife such as deer fawns and elk calves.

In the past, forest managers viewed snags as wasted wood products, harbors for forest pests and diseases, and as lightning rods and fuel for fires. Aggressive programs were undertaken to remove snags. However, in more recent times many forest managers have recognized snags and snag-dependent wildlife as integral components of the forest resource and have initiated management to protect snags. But, managing snags in timber stands is extremely difficult. Most existing snags remain from time periods prior to modern timber management. These snags will eventually succumb to decay and fall. So, to maintain a snag component in managed forests. live trees need to be identified, left to die, and protected as snag replacements.

Managers are reluctant to leave strong, healthy trees, as they represent valuable forest products, and prefer not to leave old, defective trees in fear of promoting inferior genetics and diseases. The time requirement of 100 years or more to create a large snag also conflicts with the shorter rotations (50-70 years) of timber harvest preferred by forest managers. Snags adjacent to roads, skid-trails and loading docks can be struck by logging equipment and therefore can be hazardous to loggers. Snags which pose a danger, according to state regulations, must be felled to maintain safety in work areas.

One management technique being adopted in some areas is to maintain clumps of snags and replacement trees in strategically located sites away

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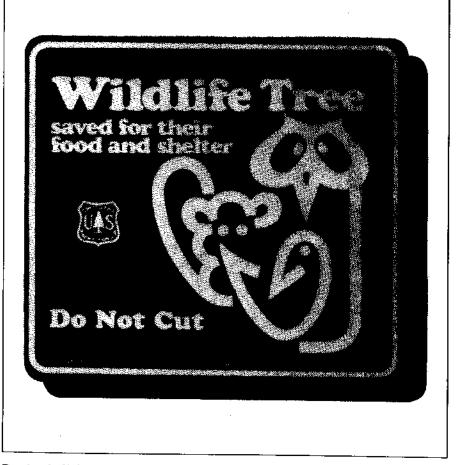
Pileated woodpeckers — black, crow-sized birds with red crests — use their chisel-like bills to bore large holes in search of insects.

from heavy human use areas, but adjacent to other important habitat components such as draws, streams, meadows, beaver ponds and lakes. The size and distribution of these clumps depends on the requirements of the wildlife residing in the managed area.

Placement of artificial nesting boxes in areas lacking adequate snags is frequently suggested. And for some species in some habitat types this is an effective technique; great successes with wood duck and bluebird nesting boxes are well documented. But, it would be extremely expensive and impractical to implement and maintain nesting boxes for cavity-nesters due to their behavioral need to excavate. It is much wiser to protect and perpetuate natural snags—something all forest managing agencies are encouraged to do.

Even when forest managers are able to designate and protect snags for wildlife, they are vulnerable to woodcutters. Increasing demands for firewood throughout the state are significantly reducing the number of snags that are available for wildlife. Ever since the 1974 oil embargo, when the price of heating oil drastically increased, more and more Americans have been installing fireplaces or wood burning stoves to supplement or replace other heating systems. Even as people learn that wood burning is not as economical as first thought, they burn wood for aesthetic values and for security against power failures. This growing demand for firewood has essentially removed snag habitat from some forested areas. Areas heavily accessed by roads or near urban centers are especially hard hit. In 1983, the U.S. Forest Service began requiring permits for woodcutting. Last year the Okanogan National Forest alone issued over 2,000 permits for 5,762 cords of wood.

Assuming it requires five 50-foot snags, twelve inches in diameter, to equal one cord of wood and that one-half the firewood taken was from standing snags, this represents 14,405 snags no longer available to wildlife. Since most woodcutters prefer standing snags to naturally downed material, it's likely the loss of snags was much greater. Projecting the harvest of firewood statewide from this regional sample would indicate that the



Posting individual snags is effective, but impractical, and it may unfortunately imply that unposted snags are less valuable.

total loss of snag habitat is enormous.

Many forest managers recognize this impact from woodcutters and are implementing programs to protect areas deficient in snags. Okanogan National Forest managers have become aggressive in snag management and have closed portions of two ranger districts to cutting of snags 12 inches or larger in diameter (Tonasket District east of the Okanogan River, and the Twisp District between the Methow and Okanogan Rivers south of Highway 20). Compliance with snag cutting closures has been poor, but through better public information and enforcement programs, forest officials are encouraging better public cooperation.

Another technique used by the Forest Service to protect snags in heavy recreational areas is to post individual snags with signs designating them as "WILDLIFE TREE—saved for their food and shelter— Do Not Cut." This program, although effective in key areas, has limited use due

to the impracticality of posting all important snags and has the disadvantage of implying unposted snags are less valuable.

It's obvious that demand for firewood will remain high. Firewood is recognized as an important forest product, and the Forest Service and other agencies do provide woodcutting opportunities. But the woodburning public must become more aware and appreciative of the value of snags to wildlife and seek other sources of wood.

Forest management agencies frequently designate areas open for woodcutting. These areas usually have an abundance of wood created by forest fires, wind-loss or insect infestations. Other possibilities include materials from timber-thinning projects or slash from timber sales. If woodcutters make an effort to acquire the proper permits and use designated cutting areas, impacts to snag habitat and snag dependent wildlife will be greatly reduced.